

Remarks on the best Methods of displaying *Entozoa* in Museums.

By T. SPENCER COBBOLD, M.D., F.R.S., F.L.S.

THE Council of the Royal College of Surgeons having afforded me an opportunity of remodelling their collection of internal parasites, I have, while thus engaged, introduced a few novelties in the mode of mounting the specimens, and I have ventured to think that a brief notice of them might be usefully placed on record.

Some years' experience with the practical working of museums has satisfied me that for the secure and permanent closure of spirit preparations no plan surpasses the old Hunterian method; but in cases where it is desired to remove the specimens for temporary examination or redissection, the employment of any particular kind of jar becomes a mere matter of taste. The wide glass-stoppered jars are unsightly, inconvenient, and expensive; nevertheless they are preferable to the common medicine-phials now employed in the British Museum. Retaining the Hunterian plan in so far as mere closure is concerned, I would invite attention to the following points:—

1. Except in cases where the specimens are large and bulky, it is always advisable to attach the objects to sheets of mica. The employment of mica is in itself no novelty, but it has been usual to suspend the mineral in the jar with the specimen attached. This is not necessary. It should always be fixed to the sides of the jar, which may easily be done by making the mineral plate a little wider transversely than the corresponding diameter of the jar. The elasticity of the mica, if not too thin, will ensure fixity. I introduced this method ten years ago, and on this principle mounted a series of *Entozoa* in the Anatomical Museum of the Edinburgh University. The form of the jar may vary, but it is essential that the aperture be nearly of the same diameter as the body of the vessel; otherwise, on introducing the specimen, the mica sheet will be injured by too great a strain upon its elasticity. For my own part, I prefer that form of jar first recommended by Prof. Goodsir. In this case (as shown by the preparations on the table) the rim and aperture resemble those of an ordinary hyacinth-glass. This leaves a circular shelf on which Mr. Goodsir used to place a bridge of stout whalebone, and by means of suspensory threads the mica and specimens were attached in the ordinary manner. I have long ceased to adopt this plan. As regards affixing, in the case of complete specimens, it is highly desirable

that their position should be made to correspond with the attitudes which they assume in nature.

2. In the case of Hydatids, and in instances where it is desired to show a large mass of parasites, I have occasionally reversed the above method. Thus, in place of a vertically disposed sheet of mica, I introduce a circular diaphragm of the same substance, its diameter slightly exceeding the width of the jar. The mica should be stout; otherwise the weight of the spirit (on the jar being moved or carelessly inverted) will be sure to displace the diaphragm. It should be carried about two-thirds of the way down the bottle, and be fixed in an obliquely transverse position. The specimens are thus suitably displayed at or near the centre of the vessel. It is unnecessary to fix them to the mica; but, if desired, they may be retained in their place by a second or superimposed diaphragm. Ordinarily this is not advisable.

3. Where the parasites are very minute, yet still sufficiently visible to the naked eye to be worthy of museum display, a thin, square, oblong or circular plate of mica may be applied and fixed to the vertical sheet, including the objects after the fashion of ordinary microscopic preparations. This seemingly simple method, however, required great care and patience; for, in place of using cement, it is necessary to fix the two mica plates together by means of fine thread. In doing this the operator is liable to displace or distort the specimens; but when once accomplished without disturbance, there is no fear of subsequent injury. This method is eminently suitable for the display of Oxyurides, Sphærulæ, and other minute Nematodes, which in our pathological collections are usually seen lying at the bottom of the vessels enclosing them. In some instances, as obtains in the British Museum, I have seen the specimens enclosed in a second vessel or glass tube, the one swinging within the other in a very slovenly manner\*.

4. In certain cases where none of the above-described methods are altogether satisfactory, I have introduced another plan which I am particularly desirous of bringing under the Society's notice.

\* The Entozoa within our national collection are both numerous and valuable. At present, however, the bottles containing them are lodged within a glass case, the latter being itself placed in a dark passage leading to the so-called "insect-room." The specimens have been skilfully catalogued; but, for want of space, they are huddled together without any definite or systematic arrangement. For the furtherance of the interests of science they are practically unavailable. It is earnestly hoped that Dr. Baird's efforts to secure a proper apartment for their exhibition may yet meet with success.—T. S. C.

It refers to the employment of various-sized watch-glasses. They are affixed to the vertical sheets of mica, and the specimens are introduced into their concavities; each glass being fastened to the mica by threads passed through two or more holes previously drilled at its circumferential margin. I find two holes sufficient, one on either side; but greater fixity and security may be obtained by boring more apertures at equidistant intervals. This adds, however, to the expense and risk of breakage. The holes should freely admit the passage of an ordinary needle. This plan is eminently suitable for the display of small flukes, *Cysticerci* (of the "measle" kind), and minute *Hydatids*.

5. A few years ago I initiated the employment of carmine, aniline, and other pigments in the preparation of Entozoa for museum purposes, and I am glad to be able to state that the specimens thus first treated still retain their colouring almost unimpaired; at least, this is the case with those saturated with carmine. For microscopic purposes, these pigments had long previously being employed both here and on the Continent. Some of the magenta-dyed preparations have stood very well, where the carbolic-acid solution had been sufficiently strong to fix the colour. The specimens preserved in the Museum of the Middlesex Hospital, however, hardly offer a fair criterion of the durability of this latter pigment, since the preparations have been all along exposed to a strong sun-light. In a large collection the use of carmine should not be excessive, but in particular instances (as, for example, in the encapsuled condition of *Trichina spiralis*) its employment cannot be too highly recommended.

[The above remarks were illustrated by the exhibition of specimens of *Hydatids*, *Cysticerci*, *Amphistomata*, *Sphæriculariæ*, *Trichinæ*, *Spiroptera*, and *Cœnuri*, prepared by the author for the Museum of the Royal College of Surgeons.]

